

Message Text

UNCLASSIFIED

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ACTION OES-07

INFO OCT-01 EA-09 ISO-00 COME-00 EB-07 CIAE-00 INR-07
NSAE-00 NSF-02 ERDA-07 NAS-01 PA-02 PRS-01 USIA-15
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FM AMEMBASSY TOKYO

TO SECSTATE WASHDC 7509

UNCLAS TOKO 6632

FOR OES/APT/SA

DEPT PASS TO DOC/NBS

E.O. 11652: N/A

TAGS: TECH, JA

SUBJECT: NEW MAGNETIC ALLOY DEVELOPED BY JAPANESE METALLURGISTS

1. A GROUP OF SCIENTISTS AT THE RESEARCH INSTITUTE FOR METALLURGY, TOHOKU UNIVERSITY, LED BY PROF. KEN MASUMOTO, HAS SUCCEEDED IN DEVELOPING A NEW AMORPHOUS MAGNETIC ALLOY HAVING A WIDE RANGE OF APPLICATIONS IN MAGNETIC AND ELECTRONIC DEVICES.

2. TWO TYPES OF ALLOYS HAVE BEEN DEVELOPED: THE FIRST IS MIXTURE OF COBALT, BORON, SILICON AND IRON; THE SECOND TYPE IS MIXTURE OF COBALT, BORON, SILICON, IRON AND NICKEL. ALLOY IS PRODUCED BY HIGH-SPEED CHILLING PROCESS IN WHICH MIXTURE IS CHILLED FROM TEMPERATURE OF 100,000-1,000,000 DEGREES C. TO ROOM TEMPERATURE IN A SECOND. IT COMES IN FORM OF BAND MEASURING ABOUT 4 CENTIMETERS IN WIDTH AND ABOUT 50 MICRONS IN THICKNESS. BAND CAN BE PRODUCED AT RATE OF ABOUT 20 METERS PER SECOND.

3. NEW ALLOY IS REPORTED TO HAVE THE FOLLOWING
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PROPERTIES: A TENSILE STRENGTH OF ABOUT 300 KILOGRAMS PER SQUARE MILLIMETER, SAME AS PIANO WIRE; HARDNESS MUCH GREATER THAN STEEL; CORROSION RESISTANCE 1 MILLION TIMES THAT OF STAINLESS STEEL; AND MAGNETIC PROPERTIES SUPERIOR TO MOLYBDENUM PERMALLOY AND MAGNETIC MATERIAL CURRENTLY IN WIDE USE.

4.BECAUSE OF ITS HIGH MAGNETIC PERMEABILITY, THE
NEW ALLOY IS APPLICABLE TO VARIOUS TYPES OF MAGNETIC
DEVICES INCLUDING CASSETT TAPE RECORDERS, VIDEO TAPE
RECORDERS, TRANSFORMERRS.

5. FINDINGS OF TOHOKU UNIVERSITY RESEARCH AND
DEVELOPMENT OF NEW MAGNETIC ALLOY WILL BE MADE PUBLIC AT
INTERNATIONAL MAGNETIC CONFERNCE TO BE HELD IN LOS
ANGELES IN JUNE THIS YEAR.
SHOESMITH

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Message Attributes

Automatic Decaptioning: X
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Current Classification: UNCLASSIFIED
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Disposition Approved on Date:
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Disposition Comment:
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Disposition Event:
Disposition History: n/a
Disposition Reason:
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Review Release Date: n/a
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TAGS: TECH, JA
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Review Markings:
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